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EXAMINER

HICKS, MICHAEL J

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/743,214 | Applicant(s) BRODERSEN ET AL. | |
| | Examiner MICHAEL J. HICKS | Art Unit 2165 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39,40,44-47,49-57,59-62,64,65,67 and 71-74 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-40, 44-47, 49-57, 59-62, 64-65, 67 and 71-74 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 39-40, 44-47, 49-57, 59-62, 64-65, 67 and 71-74 Pending.
Claims 1-38, 41-43, 48, 58, 63, 66, and 68-70 Canceled.

Response to Arguments

2. Applicant's arguments filed 9/22/2009 have been fully considered but they are not persuasive.

As per Applicants arguments asserting that Sandhu conflicts of interest are not equivalent to a condition of access authorization, Examiner respectfully disagrees. Firstly, Examiner asserts that it is clear by the disclosure of Sandhu that the RBAC ideas presented therein are applicable to database systems and system management environments (See Page 48, Column 1, Paragraph 2) and that the cited sections of Sandhu can properly be applied to a database environment and combined with the co-cited prior art and as such, the resources of Sandhu are considered to be equivalent to the virtual databases of the instant application. Examiner notes that the roles of Sandhu each have separate access privileges, and being assigned a particular role which has access to resource (e.g. virtual database) A and does not have access to resource (e.g. virtual database) B, for reasons of conflict of interest or otherwise, discloses the limitation of denying access to at least one other virtual database when the user has the access authorization to the first virtual database as the roles of Sandhu are specifically designed to allow access to a first resource and deny access to other

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specific resources based on the allowed access to the first resource. Examiner asserts that Sandhus example of the Billing Clerk and Accounts Receivable Clerk reinforces Examiners interpretation in that it makes clear that there are resources which a user assigned to the Billing Clerk role does not have access to and which a user assigned to the Billing Clerk role may not gain access to by being assigned to the Accounts Receivable Clerk role explicitly due to the positive permissions granted by the Billing Clerk role (e.g. the permissions to access the resources available to the Billing Clerk role). Examiner notes that Sandhus motivation of implementing this functionality (e.g. to prevent conflicts of interest) is immaterial as the disclosure of Sandhu makes it clear that the functionality was implemented.

As per Applicants arguments asserting that the prior art fails to disclose a denial of access to a virtual database that "corresponds to at least one tenant other than the first tenant", Examiner respectfully disagrees. Examiner notes that Section 7.8 of Sandhu clearly discloses the existence of a decentralized management of role assignment. Examiner asserts that this indicates that the management of particular roles and therefore the management of access to particular resources may be assigned to different administrators (e.g. tenants) and as such the at least one other virtual database may correspond to at least one tenant other than the first tenant.

As per the above arguments, the rejection will be updated to reflect amendments made to the claims and maintained.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 39-40, 44-47, 49-57, 59-62, 64-65, 67 and 71-74 rejected under 35 U.S.C. 103(a) as being unpatentable over Elsey et al. (U.S. 6,870,921 B1) in view of Thomas ("Team-based access control (TMAC): a primitive for applying role-based access controls in collaborative environments", Proceedings of the second ACM workshop on Role-based access control; Pgs. 13-19; 1997; ACM) and in view of Sandhu ("The NIST model for role-based access control: towards a unified standard", Proceedings of the fifth ACM workshop on Role-based access control, Pgs. 47-63, 2000, ACM).

As per Claim 39, Elsey discloses a database system comprising: a partitionable database, wherein the partitionable database is partitioned into a plurality of virtual databases (column 2, lines 16-17), each virtual database of the plurality of virtual databases comprises a respective plurality of files (column 4, lines 2-3, wherein "virtual database" could mean "private directory", Examiner notes that directories hold files of distinct information.), each virtual database of the plurality of virtual databases corresponds to a respective tenant of the partitionable database, and for each tenant of the partitionable database, a partitioned virtual database for the tenant comprises stored files associated with the tenant (column

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4, lines 9-16); and an access control subsystem (column 4, lines 16-22), wherein the access control subsystem is coupled to the virtual databases (column 4, lines 16- 22), the access control subsystem is configured to provide a first access to a user, the first access is to files in a first virtual database, the first virtual database is among the plurality of virtual databases, the access control subsystem is configured to provide the first access to the user only when the user has access authorization to the first virtual database from a first tenant and the first tenant corresponds to the first virtual database (column 4, lines 16-22).

Elsey fails to disclose the access authorization is based at least in part on the whether the user is in communication with a customer of the first tenant, the access control subsystem is configured to deny access to at least one other virtual database when the user has the access authorization to the first virtual database, the at least one other virtual database comprises one or more of the virtual databases other than the first virtual database, and the at least one other virtual database corresponds to at least one other tenant other than the first tenant.

Thomas discloses the access authorization is based at least in part on the whether the user is in communication with a customer of the first tenant (Page 18, Column 1, wherein the permissions may be deactivated at the end of a workflow instance.).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Elsey with the teachings of Thomas to include the access authorization is based at least in part on the whether the user is in communication with a customer of the first tenant with the motivation to distinguish the

passive concept of permission assignment from the active concept of context-based permission activation (Thomas, Abstract).

Sandhu discloses the access control subsystem is configured to deny a second access to at least one other virtual database when the user has the access authorization to the first virtual database, the at least one other virtual database comprises one or more of the virtual databases other than the first virtual database (Section 5.1 clearly discloses static separation of duties which is used to prevents a user from being authorized for one role (e.g. a role allowing for access to at least one other virtual database) based on the user being authorized for a current role (e.g. a role allowing access to the first virtual database).), and the at least one other virtual database corresponds to at least one other tenant other than the first tenant (See Section 7.8 which clearly discloses decentralized administrative control.).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Elsey with the teachings of Sandhu to include the access control subsystem is configured to deny a second access to at least one other virtual database when the user has the access authorization to the first virtual database, the at least one other virtual database comprises one or more of the virtual databases other than the first virtual database and the at least one other virtual database corresponds to at least one other tenant other than the first tenant with the motivation of preventing conflicts of interest in a role based system (Sandhu, Section 5.1)

As per Claim 40, Elsey discloses the virtual databases are disjoint from one another (column 4, lines 9-16, wherein the information stored may contain different elements).

As per Claim 44, Elsey discloses the access control subsystem is configured to provide the access authorization to the user for a particular file in the first virtual database based at least in part on initiation of a database call through an associated computer telephony integration (CTI) system by the customer of the first tenant (column 5, lines 20-22) and deny the second access to the user, wherein the second access is denied based at least in part on the initiation of the database call through the associated CTI system by the customer of the first tenant (column 5, lines 20-22).

As per Claim 45, Elsey discloses an operator of the partitionable database provides a common call center service to customers of tenants of the partitionable database on behalf of the tenants (column 10, lines 20-26).

As per Claim 46, Elsey discloses a method comprising: granting an access authorization to a user of a partitionable database (column 4, lines 2-4, 16-22), wherein the partitionable database comprises a plurality of virtual databases (column 4-lines 2-3), each virtual database of the plurality of virtual databases comprises a plurality of files (column 4, lines 2-3, wherein "virtual database" could mean "private directory", Examiner notes that directories hold files of distinct information.), each virtual database of the plurality of virtual databases has a unique database owner (column 5, lines 21-22), the access authorization relates to a first virtual database of the plurality of virtual databases (column 4, lines 16- 22), providing to the user access to a file of the files in the first virtual database while the user has the access authorization (column 4, lines 16- 22).

Elsey fails to disclose the access authorization is based at least in part on whether the user is in communication with a customer of the database owner of the first virtual database; and denying to the user access to a plurality of excluded files while the user has the access authorization, wherein the excluded files comprise files in the virtual databases other than the first virtual database, and the excluded files consist of files in virtual databases with database owners other than the database owner of the first virtual database.

Thomas discloses the access authorization is based at least in part on whether the user is in communication with a customer of the database owner of the first virtual database (Page 18, Column 1, wherein the permissions may be deactivated at the end of a workflow instance.).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Elsey with the teachings of Thomas to include the access authorization is based at least in part on whether the user is in communication with a customer of the database owner of the first virtual database with the motivation to distinguish the passive concept of permission assignment from the active concept of context-based permission activation (Thomas, Abstract).

Sandhu discloses denying to the user access to a plurality of excluded files while the user has the access authorization, wherein the excluded files consist of files in the virtual databases other than the first virtual database (Section 5.1 clearly discloses static separation of duties which is used to prevents a user from being authorized for one role (e.g. a role allowing for access to at least one other virtual database) based on the user being authorized for a current role (e.g. a role allowing access to the first virtual database).), and the excluded files consist

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of files in virtual databases with database owners other than the database owner of the first virtual database (See Section 7.8 which clearly discloses decentralized administrative control.).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Elsey with the teachings of Sandhu to include denying to the user access to a plurality of excluded files while the user has the access authorization, wherein the excluded files consist of files in the virtual databases other than the first virtual database, and the excluded files consist of files in virtual databases with database owners other than the database owner of the first virtual database with the motivation of preventing conflicts of interest in a role based system (Sandhu, Section 5.1)

As per Claim 47, Elsey discloses the virtual databases are disjoint virtual databases (column 4, lines 9-16, wherein the information stored may contain different elements).

As per Claim 49, Elsey discloses the user needs an authorization from the owner of the file to access the file, the method comprising: providing the access to the file to the user after the owner of the file grants the authorization to access the file (column 4, lines 11-16; column 4, lines 19-24; column 4, lines 30-33).

As per Claim 50, Elsey discloses before the providing of the access to the file, receiving access authorization to the file for the user from the owner of the file (column 4, lines 16-22; column 4, lines 30-33).

As per Claim 51, Elsey discloses the receiving of the access authorization to the file comprises initiation, by the customer, of a database call to the user through an associated computer telephony integration (CTI) system (column 4, lines 38-59); and the denying access to the plurality of excluded files is based at least in part on the initiation of the database call to the user through the associated CTI system (column 4, lines 38-59).

As per Claim 52, Elsey discloses the partitionable database comprises a multi-tenant database having a plurality of tenants, each tenant of the tenants being an owner of a separate virtual database, at least two of the tenants utilizing a common call center service (column 4, lines 2-3; column 4, lines 9-12; column 4, lines 26-28; column 4, lines 38-51).

As per Claim 53, Elsey discloses the partitionable database stores a plurality of files that are each associated with one of a plurality of unique database owners such that the virtual databases each comprise stored files associated with the corresponding owner of the virtual database (column 4, lines 2-3; column 4, lines 9-16).

As per Claim 54, Elsey discloses the partitionable database is operated by a database operator on behalf of the owners of the virtual databases as tenants of the partitionable database (column 2, lines 20-25; column 4, lines 46-47, wherein the subscriber needs a service that is operated by an operator).

As per Claim 55, Elsey discloses each of the tenants lease capacity of the partitionable database from the database operator (column 4, lines 36- 38, wherein the subscriber or tenant needs a service that is operated by an operator).

As per Claim 56, Elsey discloses the granting the access authorization to the user for database is initiated by a telephone call from the customer through a computer telephony integration (CTI) system (column 4, lines 38-44); and the denying access to the plurality of excluded files is based at least in part on the initiation of the database call through the user through the associated CTI system (column 4, lines 38-44).

As per Claim 57, Elsey discloses the user is a representative of an organization providing a service to the owner of the first virtual database (column 4, lines 30-33).

As per Claim 59, Elsey discloses the access provided to the user is temporary access limited to a duration of the telephone call (column 5, line 32; column 5, line 56; wherein the "duration" is the time between log in and log out).

As per Claim 60, Elsey discloses the telephone call is made regarding the file, the method comprising: automatically providing access to the user to a plurality of files in the first virtual database based at least in part on the telephone call (column 10, lines 20-25; column 10, lines 35-37).

As per Claim 61, Elsey discloses the computer telephony integration (CTI) system is part of a call center service common to the owners of the virtual databases (column 4, lines 38-44; column 10, lines 20-26).

As per Claim 62, Elsey discloses the providing the access to the file is based at least in part on the user receiving the telephone call via the CTI system (column 4, lines 38-44).

As per Claim 64, Elsey discloses a method comprising: setting access privileges for a multi-tenant database (column 4, lines 2-4, 16-22), wherein the multi-tenant database comprises a partitionable database (column 4, lines 2-3), the partitionable database comprises a plurality of virtual databases (column 4, lines 2-4, wherein "virtual database" could mean "private directory"; column 4, lines 9- 16), each of the virtual databases has an owner tenant among tenants of the multi- tenant database (column 5, lines 21-22), each of the virtual databases comprises multiple associated groups of data groups (column 4, lines 9-11), the setting the access privileges for the multi-tenant database comprises setting access privileges for the data groups in each of the virtual databases (column 4, lines 16-18; column 4, lines 28-35), and for each of multiple requests by a user to data groups in the virtual databases (column 4, lines 31-32), determining whether to grant access to the user for a requested data group based at least in part on a relationship of the user to an owner tenant of a virtual database that comprises the requested data group column 2, lines 45-47; column 4, lines 19-20; column 4, lines 28-35); when the relationship of the user to the

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owner tenant is determined to be an employee relationship, granting access to the user for the requested data group (column 4, lines 28-35).

Elsey fails to disclose when the relationship of the user to the owner tenant is not determined to be an employee relationship, granting temporary access to the user for the requested data group only during a time when the user is in communication with a customer of the owner tenant, denying access to the user for at least one other data group during the time when the user is in communication with the customer of the owner tenant, and the at least one other data group comprises one or more of the data groups other than the requested data group, and the at least one other data group is in another data virtual database, wherein the another virtual database has an owner tenant other than the owner tenant of the virtual database that comprises the requested data group.

Thomas discloses granting temporary access to the user for the requested data group only during a time when the user is in communication with a customer of the owner tenant (Page 18, Column 1, wherein the permissions may be deactivated at the end of a workflow instance.).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Elsey with the teachings of Thomas to include when the relationship of the user to the owner tenant is not determined to be an employee relationship, granting temporary access to the user for the requested data group only during a time when the user is in communication with a customer of the owner tenant with the motivation to distinguish the passive concept of permission assignment from the active concept of context-based permission activation (Thomas, Abstract).

Sandhu discloses when the relationship of the user to the owner tenant is not determined to be an employee relationship, denying access to the user for at least one other data group during the time when the user is in communication with the customer of the owner tenant, and the at least one other data group comprises one or more of the data groups other than the requested data group (Section 5.1 clearly discloses static separation of duties which is used to prevent a user from being authorized for one role (e.g. a role allowing for access to at least one other data group) based on the user being authorized for a current role (e.g. a role allowing access to the first data group).), wherein the another virtual database has an owner tenant other than the owner tenant of the virtual database that comprises the requested data group (See Section 7.8 which clearly discloses decentralized administrative control.).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Elsey with the teachings of Sandhu to include when the relationship of the user to the owner tenant is not determined to be an employee relationship, denying access to the user for at least one other data group during the time when the user is in communication with the customer of the owner tenant, and the at least one other data group comprises one or more of the data groups other than the requested data group wherein the another virtual database has an owner tenant other than the owner tenant of the virtual database that comprises the requested data group with the motivation of preventing conflicts of interest in a role based system (Sandhu, Section 5.1)

As per Claim 65, Elsey discloses each of the data groups is a file stored in the multi-tenant database (column 4, lines 2-3).

As per Claim 67, Elsey discloses at least a first subset of the requests for data groups by users are received for users that are user representatives of a database operator; each request in the first subset of the requests is based at least in part on a contact to a user representative, the users that the contact is initiated by a tenant that owns a virtual database associated with the requested data group, and the access authorization for the user representative is determined to have been provided by the owner tenant based at least in part on the contact initiated by the tenant (column 4, lines 16-22; column 4, lines 28-33).

As per Claim 71, Elsey fails to disclose the temporary access granted to the user is limited to a duration of a live verbal communication between the user and the customer of the owner tenant.

Thomas discloses the temporary access granted to the user is limited to a duration of a live verbal communication between the user and the customer of the owner tenant (Page 18, Column 1, wherein the permissions may be deactivated at the end of a workflow instance.).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Elsey with the teachings of Thomas to include the temporary access granted to the user is limited to a duration of a live verbal communication between the user and the customer of the owner tenant with the

motivation to distinguish the passive concept of permission assignment from the active concept of context-based permission activation (Thomas, Abstract).

As per Claim 72, Elsey fails to disclose the temporary access granted to the user is limited to a duration of a telephone call between the user and the customer of the owner tenant.

Thomas discloses the temporary access granted to the user is limited to a duration of a telephone call between the user and the customer of the owner tenant (Page 18, Column 1, wherein the permissions may be deactivated at the end of a workflow instance.).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Elsey with the teachings of Thomas to include the temporary access granted to the user is limited to a duration of a telephone call between the user and the customer of the owner tenant with the motivation to distinguish the passive concept of permission assignment from the active concept of context-based permission activation (Thomas, Abstract).

As per Claim 73, Elsey fails to disclose the temporary access granted to the user is limited to a duration of a live verbal communication between the user and the customer of the first tenant.

Thomas discloses the temporary access granted to the user is limited to a duration of a live verbal communication between the user and the customer of the first

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tenant (Page 18, Column 1, wherein the permissions may be deactivated at the end of a workflow instance.).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Elsey with the teachings of Thomas to include the temporary access granted to the user is limited to a duration of a live verbal communication between the user and the customer of the first tenant with the motivation to distinguish the passive concept of permission assignment from the active concept of context-based permission activation (Thomas, Abstract).

As per Claim 74, Elsey fails to disclose the temporary access granted to the user is limited to a duration of a live verbal communication between the user and the customer.

Thomas discloses the temporary access granted to the user is limited to a duration of a live verbal communication between the user and the customer (Page 18, Column 1, wherein the permissions may be deactivated at the end of a workflow instance.).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Elsey with the teachings of Thomas to include the temporary access granted to the user is limited to a duration of a live verbal communication between the user and the customer with the motivation to distinguish the passive concept of permission assignment from the active concept of context-based permission activation (Thomas, Abstract).

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Points of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Hicks whose telephone number is (571) 272-2670. The examiner can normally be reached on Monday - Friday 9:00a - 5:30p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Neveen Abel-Jalil can be reached at (571)272-4074. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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